

REMARKS

Claims 1 to 5, 7 to 9, and 11 to 25 are pending in the application. Claims 1, 9, 14, 18, and 22 are the independent claims.

The applicants have amended the independent claims to define the invention more clearly. Favorable reconsideration and further examination are respectfully requested in view of the preceding amendments and the following remarks.

The Examiner rejected claims 1-2, 5-10, 14, and 18-22 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,477,689 (Mandell) in view of U.S. Patent 6,480,985 (Reynolds). In the rejection, the Examiner states that Mandell discloses the invention substantially as claimed, including a method for designing a logic circuit comprising: maintaining a data structure representative of a model; the model including combinational blocks; and generating an architectural model (C code) and an implementation model (HDL) from the data structure.

The applicants respectfully disagree that Mandell discloses the invention substantially as claimed by the applicants' amended claims. Applicants' claim 1, as amended, recites, "generating a functional design of a logic circuit". Instead, Mandell teaches a design tool that "automatically transforms a behavior description of a circuit into a hardware level representation of the circuit" (Col. 1, lines 8-10 of Mandell). This behavior description of a circuit is description 21 of FIG. 1 that, according to Mandell's method, is received during initialization step 22 (col 3, lines 48-50 of Mandell).

Reynolds was cited by the Examiner solely for its disclosure of C++ code and a model including state elements and graphical library elements. Reynolds, however, is not understood to add anything that would remedy the foregoing deficiencies of Mandell because Reynolds teaches a method that "analyzes high-level IC description language code" (abstract of Reynolds), not "generating a functional design of a logic circuit". Furthermore, Reynolds does not describe or

suggest "a model including state elements", as argued by the Examiner. Rather, as the applicants' specification states, "A block in a graphical model may represent a single combinatorial element, such as a multiplexer or state element" (page 6, lines 9-10 of applicants' specification). Referring to the applicants' specification, a state element is a block representation of an element having state in the functional design of the logic circuit. For instance, examples of state elements are "software objects that perform the function of a FF [flip-flop] or a latch" (page 6, lines 5-6 of applicants' specification). In contrast, Reynolds, provides state diagrams since "graphical representations provide more understandable representations of circuits described by the high-level IC description language code" (col 2, lines 50-52 of Reynolds). These state diagrams have elements representing distinct states of an IC. For example, see FIGs. 5a-5d of Reynolds (col 7, line 53-col 8, line 39). Reynolds does not disclose or suggest "a model including state elements".

Accordingly, claim 1 is patentable over Mandell in view of Reynolds.

Claim 1 is patentable over Mandell in view of Reynolds. Applicant's claims 2, 5, 7, and 8 are dependent upon, and further limit, claim 1. Accordingly, claims 2, 5, 7, and 8 are patentable over Mandell in view of Reynolds.

Applicant's claims 9, 14, and 18, as amended, call for "generating a model . . . , the model representing a functional design of a logic circuit". Applicant submits that claims 9, 14, and 18 are patentable over Mandell in view of Reynolds for at least the same reasons set out above with respect to claim 1.

Claim 18 is patentable over Mandell in view of Reynolds. Applicant's claims 19-21 are dependent upon, and further limit, claim 18. Accordingly, claims 19-21 are patentable over Mandell in view of Reynolds.

Applicant's claim 22, as amended, recites "a graphical user interface for receiving selections of reusable graphical library elements to generate a model . . . , the model representing a functional and hardware design of a logic circuit". Applicant submits that claim 22 is patentable over Mandell in view of Reynolds for at least the same reasons set out above with respect to claim 1.

The Examiner rejected claims 3-4 under 35 U.S.C. 103(a) as being unpatentable over Mandell in view of Reynolds, as applied to claims 1-2 above, and further in view of U.S. Patent 6,152,612 (Liao et al.).

Claim 1 is patentable over Mandell in view of Reynolds and further in view of Liao et al. Applicant's claims 3-4 are dependent upon, and further limit, claim 1. Accordingly, claims 3-4 are patentable over Mandell in view of Reynolds and further in view of Liao et al.

The Examiner rejected claims 11-12 and 23-24 under 35 U.S.C. 103(a) as being unpatentable over Mandell in view of Reynolds, as applied to claims 9 and 22 above, and further in view of U.S. Patent 6,519,655 (Anderson).

Claim 9 is patentable over Mandell in view of Reynolds and further in view of Anderson. Applicant's claims 11-12 are dependent upon, and further limit, claim 9. Accordingly, claims 11-12 are patentable over Mandell in view of Reynolds and further in view of Anderson.

Claim 22 is patentable over Mandell in view of Reynolds and further in view of Anderson. Applicant's claims 23-24 are dependent upon, and further limit, claim 22. Accordingly, claims 23-24 are patentable over Mandell in view of Reynolds and further in view of Anderson.

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The Examiner rejected claims 13 and 25 under 35 U.S.C. 103(a) as being unpatentable over Mandell in view of Reynolds, as applied to claims 9 and 22 above, and further in view of U.S. Patent Application Publication 2002/0023256 (Seawright).

Claim 9 is patentable over Mandell in view of Reynolds and further in view of Seawright. Applicant's claim 13 is dependent upon, and further limits, claim 9. Accordingly, claim 13 is patentable over Mandell in view of Reynolds and further in view of Seawright.

Claim 22 is patentable over Mandell in view of Reynolds and further in view of Seawright. Applicant's claim 25 is dependent upon, and further limits, claim 22. Accordingly, claim 25 is patentable over Mandell in view of Reynolds and further in view of Seawright.

In view of the foregoing amendments and remarks, the application is believed to be in condition for allowance, and such action is respectfully requested at the Examiner's earliest convenience.

Please apply any charges or credits to deposit account 06-1050.

Respectfully submitted,

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